

ART. V.—*Revision of the Australian Aphodiides, and
Descriptions of Three New Species allied to them.*

BY REV. T. BLACKBURN, B.A.

(Communicated by the Hon. Secretary).

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SCATONOMIDES.

Thyregis, gen. nov.

Corpus oblongum, convexum; clypeus antice emarginatus; palporum maxillarium articulo apicali elongato, manifeste acuminato, mentum antice emarginatum; palporum labialium articulis 1^o, 2^oque sat aequalibus leviter dilatatis, 3^o angustiori paullo breviori; antennae 9-articulatae; prothorax subtus ad caput recipiendum vix impressus; scutellum valde minutum sed haud plane obtectum; elytrorum epipleurae angustae; coxae anticae fere ut *Coptodactylae* sed inter femora nonnihil latiores; coxae intermediae sat parallelae; metasternum elongato-quadratum, episternis modicis (fere ut *Coptodactylae*); pygidium (exempli typici) verticale; tibiae anticae extus tridentatae, subtus carina marginatae (ut *Coptodactylae*); tarsi antici modici; tibiae posticae apicem versus fortiter dilatatae, extus bidentatae, ad apicem sat longe setosae et calcari modico armatae; tarsi postici modici, articulis basali sat brevi fortiter triangulari (quam ad apicem latus haud longiori) 2^o quam basalis vix breviori sed multo angustiori 3^o 4^oque gradatim paullo brevioribus et angustioribus 5^o quam praecedentes 2 conjuncti sublongiori; unguiculi parvi; abdomen medium brevissimum, suturis bene definitis.

I cannot find any described genus of the Coprides having the above characters in combination. According to Lacordaire's classification, this species must stand in that author's group *Scatonomides*, on account of its having the third joint of its labial palpi well developed and its front coxae not prominent; and the following characters place it (among the genera of that group) beside *Choeridium*, viz.:—Elytral epipleurae narrow, ventral sutures well defined, sides of elytra not emarginate, front

coxae not exceptionally large, hind tibiae toothed externally. It differs from the characters that Lacordaire assigns to *Choeridium* (and *Scatinus*, which he places beside *Choeridium*) by the very decidedly dilated first and second joints of its labial palpi, and also from *Choeridium* (I have not a specimen of *Scatinus* for comparison) by the apex of its front tibiae not truncate, by the strong teeth of the external margin of its posterior tibiae (which are much like those of *Coptodactyla*), and by the very much more strongly dilated basal joint of its posterior tarsi. The non-truncate apex of the front tibiae would seem to forbid this insect being placed in the sub-group of the *Scatonomides* which Harold names the *Choeridiides*, but it certainly has many structural characters of that sub-group, and I know not where else to place it. The presence of a minute scutellum appears to be a remarkable character, but in this it is closely approached by *Coptodactyla*, in which the scutellum is perfectly visible (although it does not quite rise to the dorsal surface of the elytra) when the prothorax is not quite in contact with the base of the elytra. Two genera of *Scatonomides* have previously been reported as Australian—*Pedaria*, to which Harold refers *Aphodius geminatus*, Macl., and *Coptodactyla*, which (as Harold has pointed out) is a *Choeridiid*, notwithstanding Lacordaire's having treated it as a subgenus of *Copris*. I may say, in passing, that I am not altogether satisfied with Harold's reference of *Aphodius geminatus* to *Pedaria*, inasmuch as its ventral sutures appear to me to be perfectly well defined, but as I have not an authentic specimen of *Pedaria* (other than *A. geminata*) for comparison, I am not in a position to deal with the matter confidently. The present genus differs from *Coptodactyla* and *Pedaria* by *inter alia multa* the non-truncate apex of its front tibiae.

T. KERSHAWI, sp. nov.

Oblongus ; sat latus ; fere glaber ; sat nitidus ; niger antennis et pedum setis ferrugineis, pedibus picescentibus ; capite transversim rugulato ; clypeo antice bifido ; fronte media leviter obtuse trituberculata ; prothorace quam longiori vix plus quam sesquialtiori, transversim subquadrato prope apicem sat angustato, supra aequali (fovea sublaterali utrinque posita magna

excepta), fortiter crebre nec rugulose punctulato, angulis anticis bene determinatis leviter obtusis posticis rotundato-obtusis, basi marginata; elytris profunde 10-striatis (striis 9^o 10^oque in parte posteriori conjunctis), striis duplici serie (fere ut *Coptodactylae glabricollis*, Hope, sed puncturis minoribus et crebrioribus) punctulatis, interstitiis convexis minus perspicue punctulatis; pygidio fortiter crebrius punctulato.

Long. 4 l. Lat. 2 $\frac{1}{4}$ l.

To a casual glance extremely like a small *Coptodactyla*, but, as indicated in the generic diagnosis, with very different structural characters. I am uncertain of the sex of the type, but regard it as probably a male on account of the transverse row of three tubercles on its forehead; these, however, are quite small, and are feeble conical projections of the upper outline of an ill-defined, obtuse, transverse carina.

Victoria; sent to me by Mr. J. A. Kershaw.

ONTHOPHAGIDES.

Onthophagus.

O. CARTERI, sp. nov.

Sat brevis; minus nitidus; supra breviter fulvo-setosus; subtus sparsim setis fulvis sat brevibus vestitus; niger palpis antennisque ferrugineis, harum clava testacea; clypeo transversim ruguloso antice fortiter emarginato; carina frontali nulla; oculis minus angustis, nitidis, sublaevibus; prothorace quam longiori ut 17 ad 11 latiori, supra confertim aspere (fere ut *O. Adelaidae*, Hope) punctulato, fovea sublaterali sat fortiter impressa, lateribus ante medium perspicue (pone medium vix manifeste) sinuatis, angulis anticis peracutis (subspiniiformibus), basi subtilius lineato-marginata; elytris minus perspicue striatis, interstitiis obsolete subgranulatis antice planis postice leviter convexis; pygidio sat grosse ocellato-punctulato; metasterno toto sat grosse punctulato; unguiculis sat parvis.

Maris sutura clypeali vix manifesta; pronoto antice perspicue retuso.

Feminae sutura clypeali perspicue carinata; pronoto antice vix retuso.

Long. 4 $\frac{1}{5}$ l. Lat. 2 $\frac{1}{2}$ l.

Not unlike *O. Adelaidae*, Hope, but with the sexual characters of quite different description, the elytra much less distinctly striate with interstices flatter, and closely set with minute setiferous granules, the eyes considerably wider, and on their surface only very feebly faceted, etc. It must stand beside *O. Macleayi*, Blackb., in my tabulation (T.R.S. S.A., 1903, pp. 267, etc.), from which, however, it is extremely distinct by many characters (*e.g.*, the confluent asperate puncturation of its pronotum).

N. S. Wales; Sydney (Mr. Carter).

O. JUNGI, sp. nov.

Sat brevis; modice nitidus; supra glaber; subtus sparsius fulvo-pubescentis; niger; capite crebrius fortiter punctulato; oculis angustis perspicue granulatis; prothorace quam longiori ut 5 ad 3 latiori, postice longitudinaliter obsolete sulcato, crebre subgrosse punctulato, fovea sublaterali sat profunda, lateribus ante medium laud (pone medium leviter) sinuatis, angulis anticis obtusis posticis rotundatis, basi sat fortiter lineato-marginata; elytris sat fortiter punctulato-striatis, interstitiis convexis sparsim minus subtiliter punctulatis; pygidio metasternique disco sparsius sat grosse punctulatis; unguiculis sat parvis.

Maris clypeo antice fortiter emarginato; capite inter oculos tricornuto; cornubus lateralibus elongatis arcuatis (his intus prope basin dente sat elongato instructis), intermedio brevi conico fere ad cornuum lateralium dentem aequali; carina clypeali fere nulla; pronoto antice sat alte retuso, parte retusa obsolete punctulata; elytrorum interstitiis leviter punctulatis.

Feminae clypeo antice obsolete emarginato; carina clypeali bene determinata in medio dentata; capite inter oculos sat alte carinato; pronoto antice leviter vel vix retuso; elytrorum interstitiis sat profunde punctulatis.

Long. $3\frac{3}{5}$ l. Lat. $2\frac{1}{5}$ l.

This species stands in my tabulation (T.R.S. S.A., 1903, pp. 267, etc.) besides *henleyensis*, Blackb., to which it is closely allied, but the sexual characters are extremely different. I know no other Australian *Onthophagus* in which the frontal elevation in the male at all resembles that of the present species, and the

female differs from that of *O. henleyensis* in the clypeal carina being elevated in the middle into quite a strong tooth.

S. Australia; Yorke's Peninsula (Mr. Jung).

APHODIIDES.

This group (Lacordaire's second tribe) of the sub-family Coprides is readily distinguished from the true Coprides (Lacordaire's first tribe) *inter alia* by the presence of two spines at the apex of the hind tibiae—the true Coprides having only one spine. It is largely represented in Australia in respect of species, and fairly numerously in respect of genera. Masters' Catalogue enumerates 14 species attributed to five genera; and since the publication of that catalogue 20 species have been added, one of them appertaining to a genus not previously recorded as Australian (*Rhyssemus*). One genus and species, however [*Pedaria* (*Aphodius*) *geminatus*, Macl.], has been shown to be wrongly attributed to the group, and one generic name (*Proctophanes*, nom. praeocc.) has been replaced by a new name (*Proctammodes*). Moreover, there is a want of evidence of the occurrence in Australia of one of the genera (*Ammoecius*) enumerated by Masters. Eight species have been attributed (all by Macleay) to *Ammoecius*, some of which are known to me somewhat certainly, and I do not find a genuine member of the genus among them, or among the other Australian Aphodiides that I have had the opportunity of examining. I furnish below some notes on the species that Macleay described, and add descriptions of a number of new species, among which will be found representatives of *Psammodius* and *Saprosites*—genera that have not hitherto been recognised as Australian—and also a species that I place with some hesitation in *Euparia* (another genus not previously recorded as Australian).

The following tabular statement shows the characters that I have relied upon in apportioning the species before me to their genera. As there are, among the new species described below, a few that do not seem quite typical representatives of the genera in which I have placed them, and which may possibly be attributable to closely allied genera unknown to me that may have been formed for Aphodiides of regions outside Australia (the Aphodiid genera being for the most part widely distributed), it seems well to note the fact that I have referred the species to

genera strictly on the characters cited below. This statement will prevent any difficulty arising in identifying my new species, even if it should prove that any new genera have been founded elsewhere based on the peculiarities mentioned below in some of the species described. The principal instance of doubtful apportionment occurs in Saproites, some of the species I attribute to this genus having the intermediate coxae considerably more widely separated *inter se* than they are in the American species before me. I cannot, however, ascertain that any genus has been formed at the expense of Saproites on this character, nor does it appear to me a sufficient character for the establishment of a new genus.

- A.—Mesosternum declivous between intermediate coxae—not continuing plane of metasternum.
- B.—Dorsal surface of elytra not having a basal edging.
- C.—Intermediate coxae approximate - - - Aphodius.
- CC.—Intermediate coxae widely separated from each other - - - Proctammodes.
- BB.—Dorsal surface of elytra having a basal edging.
- C.—Hind femora oblong or subparallel (their tibiae narrow, not or scarcely dilated externally).
- D.—Pronotum not transversely sulcate.
- E.—Sides of pronotum normal - - - Ataenius.
- EE.—Sides of pronotum explanate - - - Euparia.
- DD.—Pronotum transversely sulcate - - Rhyssemus.
- CC.—Hind femora short and wide, their front outline strongly arched - - Psammoidius.
- AA.—Mesosternum horizontal, continuing the plane of the metasternum.
- B.—Labrum and mandibles normal - - - Saproites.
- BB.—Labrum and mandibles protruded - - Saprus.

Aphodius.

The Australian species of this genus differ from all the other Australian Aphodiides observed by me (except the two species of Proctammodes) in that the dorsal surface of the elytra passes

to the front declivity quite evenly, without a trace of a defined margin. An examination of my comparatively small collection of Aphodiides from other parts of the world leads me to the opinion that this is an important character for dividing the Aphodiid genera into groups, although I do not find it referred to by Lacordaire or Erichson (who both furnished tabulations of the Aphodiid genera known to them), nor is it mentioned in any of the works in my possession of de Harold.

This cosmopolitan genus (containing some cosmopolitan species) is not, so far as I can judge, very numerously represented in Australia. Master's Catalogue enumerates 7 species (2 of them certainly introduced), 6 have been added subsequently, and I now have 4 more to add, making a total of 17. As the Aphodii are easily collected, and neither very small nor very obscure insects, it is unlikely that an exceptionally large proportion of them have hitherto escaped notice. When it is remembered, then, that Erichson enumerated (A. D. 1848) 79 species as known in Germany alone, it certainly appears likely that Australia is not rich in the genus. As far as I know all the 17 names represent valid species.

Of the described species 4 are unknown (or only doubtfully known) to me, viz., *albertisi*, Har.; *australasiae*, Bohem.; *candezei*, Har.; and *erosus*, Er. I am not able to place them in the following table on account of the structure of their eyes not having been sufficiently indicated by their authors. I therefore supply the following notes on them.

A. ALBERTISI, Har.

I have specimens from tropical Queensland (Harold's locality) of an Aphodius which must, I think, be very near *Albertisi*, but as it departs from the description in several details of puncturation I cannot confidently identify it. The elytral interstices (*e.g.*) of *Albertisi* are described as "lisses," while those of the specimens before me are, under a good lens, distinctly (though very finely) punctulate. In the following tabulation the specimens before me fall beside *A. granarius* and *frenchi*, differing from both by their testaceo-ferruginous color, from the former by the very distinct puncturation of their pronotum and from the latter by the much greater sparseness of the same.

A. AUSTRALASIAE, Bohem.

I have not seen any *Aphodius* that seems likely to be this species. It is probably near *A. frenchi*, Blackb., but differs from the latter *inter alia* by the presence on the pronotum of a longitudinal median line devoid of puncturation.

A. CANDEZEI, Har.

This species is said to be from Adelaide. I have not met with it myself nor seen it in any of the numerous South Australian collections that I have examined. It seems to be very distinct from the other described Australian *Aphodii*. It is of moderate size (long. $3\frac{1}{2}$ l.), with testaceous elytra, on which there are some defined fuscous markings.

A. EROSUS, Er.

There is a single example (from Tasmania—Erickson's locality) in Mr. Griffith's collection which is probably this species; but as it is, in that case, a rather extreme colour variety, I do not feel justified in treating it as definitely identified without having seen a typical specimen. Some further remarks on it will be found (below) under *A. suberosus*, Blackb. In the following tabulation its place is presumably beside *A. insignior*, Blackb., from which it differs, *inter alia*, by its sexual characters.

TABULAR STATEMENT OF CHARACTERS OF AUSTRALIAN
APHODII.

(Exclusive of the four species discussed above).

- A.—Surface of eyes nitid, and faceted only
very feebly (all large species).
- B.—Base of pronotum margined - - *yorkensis*, Blackb.
- BB.—Base of pronotum not margined.
- C.—Hind angles of prothorax entirely
rounded off - - - - *andersoni*, Blackb.
- CC.—Hind angles of pronotum very obtuse,
but distinctly indicated.
- D.—The elytra entirely clothed with
pubescence - - - - *tasmaniae*, Hope.
- DD.—The elytra pubescent only near
the apex - - - - *howitti*, Hope.

- AA.—Surface of eyes more opaque, very conspicuously faceted.
- B.—Elytral interstices, *inter se*, equal or nearly so.
- C.—The pronotum unicolorous.
- D.—The pronotum scarcely punctulate granarius, Linu.
- DD.—The pronotum closely and somewhat strongly punctulate - - frenchi, Black.
- CC.—The pronotum bicolorous - - - lividus, Oliv.
- BB.—Some of the elytral interstices tuberculate or more elevated than the rest.
- C.—The pronotum closely and evenly punctulate.
- D.—The alternate elytral interstices non-tuberculate - - - victoriae, Black.
- DD.—The alternate elytral interstices tuberculate - - - suberosus, Blackb.
- CC.—Pronotum punctured neither closely nor evenly.
- D.—The alternate elytral interstices strongly tuberculate - - insignior, Blackb.
- DD.—The alternate elytral interstices not tuberculate.
- E.—Pronotum nitid.
- F.—Pronotum unicolorous - baldiensis, Blackb.
- FF.—Pronotum margined with testaceous- - - callabonensis, Blackb.
- EE.—Pronotum opaque - - lindensis, Blackb.

A. HOWITTI, Hope.

This species was described very briefly in 1846, and attributed to Victoria, and the next year its author described a species from Tasmania (under the name *tasmaniae*) in almost exactly the same words. In 1859 de Harold (Berl. Zeit.) reported the two species identical, but in 1861 (*loc. cit.*) stated that he had examined specimens (emanating from Hope himself) in Chevrolat's collection and had found that so far from being identical they had absolutely nothing in common ("durchaus nichts gemein"). In Tr.R.S. S.A. (1892, p. 209), I quoted de Harold's earlier

opinion, and drew attention to the fact that that author did not refer to the sexual characters which are strongly marked. At that time I had not seen de Harold's later note, and I have now to add the remark that I have no doubt of de Harold's statement of the two species having nothing in common being founded upon an examination of two specimens of different sex. I have taken, in Tasmania and Victoria plentifully, Aphodii which I cannot doubt are identical with those on which Hope founded the descriptions referred to above, and have not found in those localities (or seen in numerous collections made there) any others (than those) which come at all near agreement with Hope's descriptions. The Aphodii just mentioned, in my opinion, represent two extremely closely allied species, in both of which the sexual differences (indicated in my paper referred to above) are very well marked, and might not unreasonably be regarded, by an observer who had seen only one of each sex, as specific. As species I find that both vary in colouring too much for any reliance to be placed upon colour. In *tasmaniae* the prothorax is a little wider than in *howitti* of the same sex, and its hind angles are a little better defined; the head is, in both sexes, more depressed in its hinder part; and the elytra are clothed on their entire surface (in *howitti* only near the apex) with fine, very short, inconspicuous pubescence. De Harold seems to have had before him as *tasmaniae* a female, and as *howitti* a male. I am by no means confident, however, that they were not two specimens of *howitti*.

A. ANDERSONI, sp. nov.

Fem. (?) Sat parallelus; sat nitidus; supra (marginibus summis exceptis) glaber; ferrugineus; clypeo sat crebre sat fortiter punctulato, antice rotundato, margine minus fortiter recurvo; fronte minus crebre minus fortiter punctulato; oculis magnis supra nitidis, fere laevibus; prothorace quam longiori ut 8 ad 5 latiori, supra minus fortiter inaequaliter minus crebre minus fortiter (disco postice laevi) punctulato, antice fortiter angustato, latitudine majori pone medium sita, lateribus fortiter rotundatis, angulis anticis obtusis vix prominulis posticis rotundatis, basi haud marginata; scutello modico (fere ut *A. tasmaniae*, Hope); elytris fortiter striatis, striis nonnihil creulatis, interstitiis late

subconvexis (2^0 sat crebre nec fortiter ruguloso-punctulato, ceteris magis sparsim plus minusve seriatim, punctulatis), tibiis posticis transversim bicarinatis, setis inter se diversis vestitis.

Long. $4\frac{2}{5}$ l. Lat. 2 l.

An elongate narrow species allied to *A. tasmaniae*, Hope (differing by, *inter alia*, its nonpubescent dorsal surface), *A. howitti*, Hope (differing by, *inter alia*, its prothorax much more narrowed in front, with much more strongly rounded sides, having its greatest width notably behind the middle, and with hind corners quite rounded, no trace of an angle), and *A. yorkensis*, Blackb. (differing by, *inter alia*, the non-margined base of its pronotum. The unique type of this species was given to me many years ago by Mr. J. Anderson, of Port Lincoln. I have little doubt of its being a female, on account of its prothorax notably narrower than its elytra. Its eyes are scarcely visibly faceted.

South Australia (western part of Eyre's Peninsula).

A. SUBEROSUS, sp. nov.

Fem. Oblongus; minus convexus; minus nitidus; supra breviter setosus; luteus, piceo-variegatus, antennis piceis; capite sat crebre sat aequaliter sat fortiter subrugulose punctulato, antice (vix sinuatim) subtruncato; oculis valde perspicue granulatis, prothorace quam longiori sesquialtiori, supra crebre fortiter (subgrosse) sat aequaliter punctulato, longitudinaliter canaliculato, antice parum angustato, lateribus pone medium late profunde excisis, angulis anticis obtusis posticis fere rectis, basi haud marginata; scutello modico punctulato; elytris crenulato-striatis, interstitiis leviter subconvexis coriaceis acervatim punctis setiferis impressis (alternis tuberculis parum elevatis sat magnis ornatis); tibiis posticis transversim bicarinatis, setis inter se diversis vestitis; tibiis anticis extus 3-dentatis.

Long. $3\frac{1}{2}$ l. Lat. $1\frac{2}{5}$ l.

Doubtless allied to *A. erosus*, Er., but evidently quite distinct, since the colour of that species is described as very different (*e.g.*, the scutellum black), and the puncturation widely distinct (*e.g.*, the pronotum "vage minus subtiliter punctulatum," whereas in this species it is closely, evenly and coarsely punctured), etc., etc.

The dorsal surface of this insect is of a livid brown colour, vaguely and irregularly clouded with piceous on the head and disc of the pronotum, and much mottled with small piceous patches on the elytra. The under surface is brown, more or less clouded with vague infuscation. The male probably has the sides of the pronotum much less strongly excised behind the middle and the front tibiae bidentate externally, as in *A. victoriae*, Blackb., and (according to description) in *erosus*, Er.

Victoria (Dividing Range).

A. INSIGNIOR, sp. nov.

Oblongus; minus convexus; minus nitidus supra breviter (in capite pronotoque sat longe); setosus; niger vel nigro-piceus prothoracis lateribus elytris pedibusque luteis; capite sparsissime punctulato, antice late sinuatum truncato; oculis perspicue granulatis; prothorace quam longiori ut 4 ad 3 latiori (feminae paullo magis transverso), supra sparsissime punctulato, longitudinaliter canaliculato, antice parum angustato, lateribus aequaliter modice arcuatis, angulis omnibus obtusis, basi haud marginata; scutello modico vix punctulato; elytris punctulato-striatis, interstitiis sat planis (3^o, 5^o, 7^o, 9^oque tuberculis piceis sat fortibus seriatim instructis); tibiis posticis transversim bicarinatis, setis inter se diversis vestitis; tibiis anticis extus maris bidentatis (feminae tridentatis).

Long. 2 $\frac{2}{5}$ l. Lat. 1 l.

Resembles *A. erosus*, Er., and *suberosus*, Blackb., in having tuberculate elytra, but differs from both *inter alia* by the hind part of the lateral margin of the prothorax not being excised in the female; also differs from *erosus* by its scutellum not being black, and from *suberosus* by the entirely dissimilar puncturation of the pronotum. The tubercles of the elytra on interstices 3, 5 and 7 are considerably better defined than those of *A. suberosus*, and are on each six or eight in number; those on the 9th interstice are less conspicuous and less numerous.

W. Australia (Swan River). Sent by Mr. Lea.

A. BALDIENSIS, sp. nov.

Mas. Oblongus; minus convexus; minus nitidus; supra breviter (in capite pronotoque longe) setosus; niger, elytris (his piceo-

marmoratis) tarsisque lividis; capite inaequaliter sat grosse punctulato, antice late vix sinuatim truncato; oculis perspicue granulatis; prothorace quam longiori ut 11 ad 8 latiori, supra acervatim sat grosse (fere ut caput) punctulato, longitudinaliter (nisi basin versus obsolete) canaliculato, antice modice angustato, lateribus modice sat aequaliter rotundatis, angulis anticis leviter acutis posticis obtusis, basi haud marginata; scutello punctulato; elytris striatis, striis vix perspicue crenulatis, interstitiis leviter convexis sparsim punctulatis; tibiis posticis transversim bicarinatis, setis inter se diversis vestitis; tibiis anticis extus bidentatis.

Long. 3 l. Lat. $1\frac{1}{3}$ l.

Entirely black or piceous-black except the elytra and tarsi. Evidently of the same group as *A. erosus*, Er.; *lindensis*, Blackb.; *victoriae*, Blackb.; *suberosus*, Blackb.; and *insignior*, Blackb. I do not think it can be the male of *suberosus* (of which I know only the female), as its differences from that species are not at all of the kind that obtains intersexually in the species (of the group) of which both sexes are known. The entirely different colouring, the puncturation of the pronotum and the non-tuberculate sculpture of the elytra are most unlikely to be sexual characters. The differences from *A. lindensis* (also known only by the female) are even greater still.

Victoria; on the higher mountains (*e.g.*, Baldy) of the Alpine Range.

Ataenius.

The Australian species of this genus are probably numerous; notwithstanding their being as a rule much smaller and more obscure insects than the Aphodii, considerably more of them than all the described Australian Aphodii have come before my notice. In Masters' Catalogue, only one species (*australis*, Har.) stands as *Ataenius*. Since the date of that catalogue, however, I have myself described seven new species as appertaining to the genus, but two of them (as will be noted below), *viz.*:—*A. mendax* and *zietzi* are not correctly placed there, but must be transferred to *Saprosites* and *Psammodius* respectively, allied genera which have not been previously recorded as Australian. Sir W. Macleay described eight species as members of the genus *Ammoecius*, some of which certainly are *Ataenii*, while one of

them is probably a *Psammodius* and the rest probably belong to either *Ataenius* or *Saprosites*. At present, then, there are, I think, nine described Australian species which may be confidently referred to *Ataenius*, and three which may be doubtfully placed there. In the following pages I purpose describing 12 new species, and supplying some notes on the three of Macleay's *Ammoecii* which can be confidently transferred to *Ataenius*, but before passing to those descriptions and notes, it will be well to make some remarks on the undeterminable species of Macleay's *Ammoecii* and to furnish a table showing the distinctive characters of the known Australian *Ataenii*.

A. CRENATIPENNIS, Macl.

In describing the insects he refers to *Ammoecius*, Macleay does not mention characters that give any definite clue to their generic position, such as the structure of the hind tibiae or of the mesosternum. One can therefore do little more than guess, from the nature of such superficial characters as are mentioned, in what genera they ought to be placed; unless one can see the type or a specimen compared with the type by a thoroughly reliable authority, or at least a specimen agreeing with the scanty diagnosis and known to be from the original locality. As I have none of those advantages in respect of *A. crenatipennis* I can only say that the description reads like that of an *Ataenius* which I cannot identify with any species before me.

A. OCCIDENTALIS, Macl.

This is probably an *Ataenius* or a *Saprosites*. I incline to deem it the latter.

A. ELONGATULUS, Macl.

Its author makes this species three times as long as wide, and says that it is of "subcylindrical" form, that its surface is opaque and its pronotum very thinly and finely punctulate. I have not, to my knowledge, seen any species resembling it and cannot form any definite opinion as to its genus.

TABLE OF CHARACTERS OF THE AUSTRALIAN ATAENII.

A.—Elytral sculpture consists of well raised
carinae separating granulate intervals.

- B.—Each interval between carinae (which are equal *inter se*) bears a single row of granules - - - - - moniliatus, Blackb.
- BB.—The elytral intervals and carinae not as B.
- C.—Hind angles of prothorax quite rounded off - - - - - koebelei, Blackb.
- CC.—Hind angles of prothorax well marked.
- D.—The alternate carinae (except near apex) obsolete on inner half of the elytra - - - - - imparilis, Blackb.
- DD.—The elytral carinae equal (or nearly so) *inter se* - - - palmerstoni, Blackb.
- AA.—Elytral sculpture not as A.
- B.—Elytra setulose and granulate - - - speculator, Blackb.
- BB.—Elytra not both setulose and granulate.
- C.—Pronotum not so closely and evenly punctulate as to be without interspaces larger than the adjacent punctures.
- D.—Disc of head longitudinally strigose.
- E.—Pronotum longitudinally impressed at least near base.
- F.—Lateral parts of pronotum opaque and closely rugulose; disc of metasternum strongly and evenly punctulate.
- G.—Disc of pronotum decidedly closely punctulate - - - australis, Har.
- GG.—Disc of pronotum (except near base) quite sparsely punctulate - - - sparsicollis, Blackb.
- FF.—Lateral parts of pronotum nitid and with deep, coarse punctures; disc of metasternum punctulate only in front semicornutus, Macl.
- EE.—Pronotum not longitudinally impressed - - - - - deserti, Blackb.
- DD.—Disc of head not longitudinally strigose.

- E.—Punctures on disc of pronotum much less close than in australis, Har., not becoming fine and closer in front; head smooth.
- F.—Sides of pronotum very nitid and deeply punctured, with a large unpunctured space.
- G.—Interstices of elytral striae unusually wide and but little convex - - tweedensis, Blackb.
- GG.—Interstices of elytral striae much narrower and much more convex - - nudus, Blackb.
- FF.—Sides of pronotum much less nitid, less deeply and much more evenly punctulate.
- G.—Form unusually convex and oval - - gibbus, Blackb.
- GG.—Form much more depressed and parallel - - macilentus, Blackb.
- EE.—Punctures on disc of pronotum closer (after the manner of australis, Har.), becoming more conspicuously close in front; head usually granulate.
- F.—Head entirely and very coarsely granulate (inner side of elytral interstices strongly crenulate) - - goyderensis, Blackb.
- FF.—Head much less coarsely and not entirely granulate, or non-granulate.
- G.—Inner side of elytral interstices deeply crenulate.
- H.—Form short, subovate, strongly convex; punctures of pronotum not becoming much finer in front - - spissus, Blackb.

HH.—Form more elongate, parallel, and depressed; punctures of pronotum much finer near front than behind.

I.—Puncturation of pronotum (especially near hind angles) more coarse, and subrugulose - - - consors, Blackb.

II.—Puncturation of pronotum (especially near hind angles) less coarse and not rugulose semicaecus, Macl.

GG.—Elytral interstices only obsoletely crenulate.

H.—Size moderate (at least $1\frac{3}{4}$ l.); pronotum (viewed from side) longitudinally arched - - - coloratus, Blackb.

HH.—Size much smaller (less than $1\frac{1}{2}$ l.); pronotum (viewed from side) longitudinally flat - - - torridus, Blackb.

CC.—Pronotum very closely and evenly punctulate (elytral interstices form very narrow carinae) - - - walkeri, Blackb.

N.B.—I am unable to place A. (Ammoecius) obscurus, Macl., in the above table.

A. MONILIATUS, sp. nov.

Oblongus; sat opacus; niger, palpis rufis; capite confertim subtiliter vix aspere punctulato, antice emarginato, sutura clypeali nulla; prothorace transversim subquadrato, supra in disco (et hic subnitido) minus crebre punctulato (puncturis a basi antorsum gradatim minoribus et minus crebre positis), latera versus crebre ruguloso, longitudinaliter subobsolete canaliculato, angulis anticis obtusis posticis dentiformibus, basi haud marginata; scutello elongato-triangulari; elytris 10-costatis (costis sub-

nitidis), interstitiis seriatim concinne granulatis, spina humerali bene definita; tarsorum articulo basali valde elongato.

Long. $2\frac{1}{2}$ l. Lat. 1 l.

Differs from the other Australian *Ataenii* (known to me) with granulate elytra by, *inter alia*, its pronotum having a distinct longitudinal sulcus, and puncturation which on the disc is very far from being confluent (the interspaces of the punctures being subnitid and some of them being conspicuously larger in area than the adjacent punctures). This species seems to differ from all those described by Macleay as *Ammoecii* (some of which are, no doubt, *Ataenii*), inasmuch as they are all diagnosed as of smaller size and none of them are recorded to have granulated elytra.

N.W. Australia; sent by Mr. Froggatt.

A. KOEBELEI, sp. nov.

Oblongus; sat opacus; niger, palpis rufis; capite confertim subtilius ruguloso, antice late leviter emarginato, sutura clypeali fere nulla; prothorace transversim subquadrato, supra confertim (a basi antorsum gradatim magis subtiliter) ruguloso, angulis omnibus obtusis, basi vix perspicue marginata; scutello sat elongato, triangulari; elytris 10-costatis (costis vix subnitidis), interstitiis seriebus granulorum binis instructis (seriei internae granulis minutis), spina humerali bene definita; tarsorum posteriorum articulo basali valde elongato.

Long. $2\frac{1}{3}$ l. Lat. 1 l. (vix).

The intervals between the raised lines on the elytra bear a series of conspicuous granules, and also a row of smaller and much less conspicuous granules. In this respect *A. granulator*, Har. (from New Guinea) resembles it, but *inter alia* that species is clothed with fulvous setae.

Queensland (taken by Mr. Koebele at Cairns).

A. (AMMOECIUS) OBSCURUS, Mael.

Harold (Ann. Mus. Gen., 1877, p. 58) assigns this species to *Ataenius*, and mentions it as having granulate elytra. Unfortunately he does not say on what ground he bases his identification, and it does not seem likely that he examined the type, which is presumably in the Australian Museum at Sydney.

Macleay, in describing the species, states that the elytra have wide striae "filled with shallow punctures." I cannot therefore accept Harold's statement as reliable, though I have no doubt he is right in calling *A. obscurus* an *Ataenius*, but there is no conclusive reason alleged for thinking that Macleay was wrong in attributing punctures, rather than granules, to the intervals between the elytral costae. I have before me several specimens of an *Ataenius* taken by Mr. H. J. Carter about 50 miles north of Sydney, which present all the few characters attributed by Macleay to *A. obscurus* (not sufficient evidence, I admit, for confident identification), except that they are a trifle smaller than the size quoted by the describer ($1\frac{3}{4}$ l. instead of 2 l). This species is near *A. australis*, Har., and falls beside it in my tabulation (*vide supra*). It differs, however, from *australis* not only in being smaller, but also in the disc of its pronotum being still more closely punctulate, and in the 3rd and 5th interstices of its elytra being very evidently less strongly carinate than the 2nd and 4th interstices.

A. IMPARILIS, sp. nov.

Oblongus; sat opacus; niger; palpis antennis tarsis et tibiis anticis plus minusve ferrugineis; capite confertim subtiliter aspero, antice emarginato, sutura clypeali sinuata; prothorace transversim subquadrato supra confertim aspere (postice quam antice minus subtiliter) punctulato, angulis anticis obtusis posticis rectis, margine pone angulos posticos late emarginato, basi haud marginata; scutello elongato-triangulari; elytris 10-costatis, costis 2^a fere nulla 4^a leviter elevata 6^a modica ceteris magis altis, interstitiis seriatim granulatis, spina humerali bene definita; tarsorum posticorum articulo basali valde elongato.

Long. $2\frac{1}{2}$ l. Lat. 1 l.

Very distinct from the other *Ataenii*, known to me by the sculpture of its elytra which is very remarkable and almost indescribable, owing to the alternate costae being more declivous on their external than on their inner face (but becoming normal close to the apex); consequently, if the elytra be looked at obliquely downward from the side, there appears to be, on the more distant elytron, no costa in the place where the 2nd costa might be expected, but a wide interval between the 1st and 3rd

bearing three rows of granules, a very feeble 4th costa, a 6th costa only slightly enfeebled, and the rest of the costae well defined; but on the nearer elytron (the external face of whose costae is towards the observer) the 2nd costae appears distinct, though feeble, the 4th appears not much enfeebled, and the rest all strongly elevated.

N. S. Wales; Clarence River (sent by Mr. Lea).

A. SPARSICOLLIS, sp. nov.

Subparallelus; sat elongatus; fere glaber; obscure rufo-piceus, capite antice prothoracis lateribus palpis antennis pedibusque rufis; capite subtiliter aspero longitudinaliter strigato, antice emarginato; prothorace quam longiori fere ut 5 ad 3 latiori, subquadrato, supra in disco grosse inaequaliter (postice minus, antice magis, sparsim) punctulato, latera versus confertim ruguloso, longitudinaliter sulcato (sulco postice magis profundo), lateribus breviter setosis subtiliter crenulatis fere rectis, angulis anticis obtusis posticis fere rectis, margine pone angulos posticos late emarginato, basi haud marginata; scutello triangulari sat elongato; elytris crenulato-striatis, interstitiis carinatis, spina humerali breviter acuta; metasterno grosse sat aequaliter vix crebre punctulato; tarsorum posticorum articulo basali valde elongato.

Long. 2 l. Lat. $\frac{7}{10}$ l.

Allied to the S. Australian species which, I have no doubt, is *A. australis*, Har., but differing from it by being of somewhat narrower form and more reddish colour, and especially by the puncturation of its pronotum (which not only becomes finer towards the front of the disc but also much less close, whereas in the S. Australian species it becomes not only finer towards the front but also considerably closer), and by the distinct crenulation of the sides of that segment. In *sparsicollis*, also, the metasternum is less closely punctulate. In other respects the above description of *sparsicollis* applies also to the species that I regard as *australis*, Har.

Central Australia (Oodnadatta).

A. (AMMOECIUS) SEMICORNUTUS, Macl.

The description of this species is not sufficiently detailed for identification, but I have two examples from the original locality

(Gayndah) which bear the name on the authority of Mr. Masters, who is so remarkably accurate in his determinations that I have no doubt he is right in this case. The name seems to have been given with reference to a "very minute tubercle or tuberosity (on the back of the head on each side) which is extended in a raised line to the lateral border." This appears to be traceable in (at any rate most of) the Australian *Ataenii*, and is the line in which the subhorizontal narrow base of the head meets the declivous front part of the head; in *semicornutus* it certainly appears a little more conspicuous than in some other species (*e.g.*, *australis*, Har.), and its inner end is a little more abrupt and tubercle-like, but does not seem to me to justify such a name as *semicornutus*. I have met with specimen in Central Australia which I cannot separate from those sent by Mr. Masters. The species is somewhat near *A. australis*, Har., and *sparsicollis*, Blackb., but is readily distinguishable from both by the lateral part of its pronotum (not opaque with dense shallow rugulosity but) nitid and bearing coarse deep puncturation, and by the disc of its metasternum devoid of punctures except in the extreme front. The puncturation of the disc of the pronotum is almost as in *A. sparsicollis*, Blackb.

A. TWEEDENSIS, sp. nov.

Minus angustus; minus parallelus; minus depressus; subnitidus fere glaber; piceo-niger vel rufo-piceus, antennis palpis pedibus et corpore subtus dilutioribus; capite (parte basali excepta) laevi vel vix subtilissime punctulato, antice emarginato; sutura clypeali nulla; prothorace quam longiori fere ut 4 ad 3 latiori, subquadrato, supra in disco inaequaliter vix crebre sat grosse (antice subtilius) punctulato, latera versus puncturis haud magis crebris et areis laevibus intermixtis, lateribus leviter arcuatis, angulis omnibus obtusis, basi infra superficiei planum marginata; scutello triangulari minus elongato; elytris crenulato-striatis, interstitiis sat latis minus (apicem versus magis perspicue) convexis, spina humerali parva; metasterni disco haud punctulato; tarsorum posteriorum articulo basali valde elongato.

Long. 2 l. Lat. 1 l. (vix).

The prominent characters of this species are the absence of sculpture on the head (except some punctures across the base),

the sides of the pronotum with puncturation of the same kind as that of the disc and with unpunctured areas, the feeble humeral spines of the elytra, and the slight convexity of the elytral interstices. There is no true marginal carina on the dorsal surface of the pronotum, but the hind face of the prothorax (below the plane of the dorsal surface) projects as a ridge that from some points of view simulates a basal carina of the pronotum.

N. S. Wales; Tweed River (Mr. Olliff).

A. NUDUS, sp. nov.

Sat angustus, sat parallelus; sat depressus; sat nitidus; fere glaber; niger vel piceo-niger, pedibus dilutioribus, antennis palpisque rufescentibus; capite (parte basali excepta) vix manifeste punctulato, antice emarginato; sutura clypeali obsoleta; prothorace fere ut *A. tweedensis*, Blackb., sed quam longiori ut 3 ad 2 latiori; scutello ut *A. tweedensis*; elytris crenulato-striatis, interstitiis minus latis antice manifeste carinatis postice alte anguste carinatis, spina humerali parva; metasterni disco haud punctulato; tarsorum posticorum articulo basali valde elongato.

Long. $1\frac{9}{10}$ l. Lat. $\frac{7}{10}$ l.

Narrower, more parallel, and more depressed than the preceding *A. tweedensis*, Blackb.; the prothorax more transverse; and the elytral interstices narrower, in front a little more convex, and near the apex very much more convex. The elytral interstices, compared with those of the species referred to above as *A. australis*, Har., are in front much (but, near the apex, scarcely) less convex.

W. Australia; Pinjarrah (Mr. Lea).

A. GIBBUS, sp. nov.

Minus angustus; minus parallelus; sat convexus; minus nitidus; fere glaber; niger, antennis palpis pedibusque rufescentibus; capite (partibus basali et laterali exceptis) vix perspicue punctulato, antice emarginato; sutura clypeali vix manifesta; prothorace quam longiori ut 4 ad 3 latiori, subquadrato, supra inaequaliter vix crebre sat fortiter (antice paullo magis subtiliter) punctulato, lateribus leviter arcuatis, angulis omnibus obtusis, basi infra superficiei planum marginata; scutello triangulari

minus elongato; elytris striatis (striis leviter crenulatis), interstitiis modice latis antice modice convexis postice anguste carinatis, spina humerali parva; metasterni disco subtilissime sparsim punctulato; tarsorum posticorum articulo basali valde elongato.

Long. $1\frac{1}{5}$ l. Lat. 1 l.

Resembles *O. tweedensis*, Blackb., in form but is even wider and more convex; its surface is very manifestly less nitid; its pronotum considerably less coarsely punctulate; its elytral striae less strongly crenulate; its elytral interstices narrower and more convex; especially near the apex.

N. S. Wales; Hillgrove (Mr. Lea).

A. MACILENTUS, sp. nov.

Subparallelus; sat elongatus; minus convexus; fere glaber; subnitidus; niger, palpis antennis tarsisque ferrugineis; capite (parte basali excepta) fere laevi, antice emarginato, sutura clypeali nulla vel vix perspicua; prothorace quam longiori ut 7 ad 5 latiori, subquadrato, supra inaequaliter sat sparsim sat grosse (antice vix minus fortiter, latera versus crebre sat aequaliter) punctulato, lateribus leviter arcuatis, angulis omnibus obtusis, basi infra superficiei planum marginata; scutello triangulari modice elongato; elytris crenulato-striatis, interstitiis minus latis antice sat convexis postice anguste carinatis, spina humerali parva; metasterni disco sublaevi vel puncturis rarissimis impresso; tarsorum posticorum articulo basali valde elongato.

Long. 2 l. Lat. $\frac{9}{10}$ l.

Near *A. nudus*, Blackb., but readily distinguishable by the puncturation of its pronotum becoming close and even on the extra-discal portion.

N. S. Wales; Forest Reefs (Mr. Lea).

A. SPISSUS, sp. nov.

Minus angustus; minus parallelus; sat convexus; fere glaber; subnitidus; niger, clypei margine palpis antennis pedibusque rufis; capite postice subfortiter (latera versus crebre leviter) punctulato, antice emarginato; sutura clypeali haud perspicua; prothorace quam longiori ut 3 ad 2 latiori, subquadrato, supra sat aequaliter (basin versus magis grosse minus crebre) crebre sat

fortiter punctulato, lateribus leviter arcuatis, angulis omnibus obtusis, basi infra superficiei planum marginata; scutello triangulari minus elongato; elytris crenulato-striatis, interstitiis minus latis antice sat fortiter convexis postice sat anguste carinatis, spina humerali parva; metasterni disco fere laevi; tarsorum posticorum articulo basali valde elongato.

Long. $1\frac{1}{2}$ l. Lat. $\frac{3}{4}$ l.

In common with the preceding four species, this *Ataenius* has a hindward projecting ridge along the base of the prothorax, below the plane of the dorsal surface, which, if the prothorax is in contact with the base of the elytra, simulates a basal margin of the pronotum. In many species of *Ataenius* the corresponding ridge is (though not absolutely wanting) much less defined and conspicuous. The present insect is of convex (and but little parallel) form, similar to that of *A. tweedensis*, Blackb., and *A. gibbus*, Blackb., from both of which it differs *inter alia* by the considerably closer puncturation of the disc of its pronotum. That segment is somewhat similarly punctulate in the species mentioned above as *A. australis*, Har., but differs by its well-defined longitudinal sulcus.

N. Queensland (Mr. Koebele).

A. CONSORS, sp. nov.

Sat angustus; sat parallelus; sat convexus; fere glaber; subnitidus; niger, clypei margine palpis antennis pedibusque rufescentibus; capite postice punctulato, antice et latera versus subtilius minus crebre granulato, antice emarginato; sutura clypeali nulla; prothorace quam longiori ut 4 ad 3 latiori, supra sat aequaliter (basin versus fortiter minus crebre) crebre vix fortiter punctulato, lateribus leviter arcuatis, angulis omnibus obtusis, basi infra superficiei planum marginata; scutello triangulari, modice elongato; elytris crenulato-striatis, interstitiis sat angustis antice sat convexis postice carinatis angustis, spina humerali parva; metasterni disco puncturis non nullis sat grossis impresso; tarsorum posticorum articulo basali valde elongato.

Long. $1\frac{9}{10}$ l. Lat. $\frac{9}{10}$ l. (vix).

The puncturation of the pronotum is not much different in distribution from that of the species referred to above as *A. australis*, Har., but it is conspicuously less coarse and becomes

more suddenly finer about the middle. The absence of a longitudinal sulcus and the much less cariniform elytral interstices *inter alia* separate it widely from *australis*. Its much more parallel form distinguishes it from several of the preceding species, and the much closer puncturation of its pronotum from others. Its nearest ally is *A. goyderensis*, Blackb., from which it differs by the granulation of its head much finer and not extending to the median portion of the disc, and by the puncturation of its pronotum considerably closer and finer in the front part.

N. Queensland (Mr. Koebele).

A. (AMMOECIUS) SEMICOECUS, MacL.(?).

This name appears to be a misprint for "semicaecus." I have before me a species from N.W. Australia which I am disposed to identify with it, since it agrees with the description fairly well, and is from the same region. It differs from the description in the tendency of the sides of the head to granulation, in the hind angles of the prothorax being more obtuse than I should expect from the phrase "nearly square," and in the elytra not being conspicuously more "brownish" than the pronotum. It would not, however, be safe to treat this species as distinct from *semicoecus*, especially as it agrees with the description in its pronotum being "finely punctulate," more finely and smoothly, indeed, than in any of its immediate allies. Except for this last-named character the insect is very close to *A. consors*, Blackb.

A. COLORATUS, sp. nov.

Minus angustus; modice parallelus; modice convexus; fere glaber; minus nitidus; niger palpis antennis pedibus elytrorumque apice ferrugineis; capite postice punctulato, antice et latera versus subtilius plus minusve perspicue granulato, antice emarginato; sutura clypeali nulla; prothorace quam longiori ut 4 ad 3 latiori, subquadrato, supra sat aequaliter sat crebre vix fortiter (postice magis fortiter, paullo minus crebre) punctulato, lateribus leviter arcuatis, angulis omnibus obtusis, basi infra superficiei planum marginata; scutello triangulari minus elongato; elytris striatis (striis leviter crenulatis), interstitiis minus latis antice sat convexis postice angustis manifeste

carinatis, spina humerali parva; metasterni disco vix perspicue punctulato; tarsorum posticorum articulo basali valde elongato.

Long. $1\frac{9}{10}$ l. Lat. $\frac{9}{10}$ l.

Somewhat intermediate in form between *A. gibbus*, Blackb., and its allies, and the more parallel depressed species. The puncturation of the pronotum is much like that of the species I take to be *A. australis*, Har., but is somewhat more rugulose and less close near the hind angles. The reddish apical region of the elytra seems to be constant. The crenulations of the elytral striae are feebly impressed, as in *A. gibbus*, from which species it is readily distinguishable by, *inter alia*, its much less smooth head and the much closer and more even puncturation of its pronotum. It is not unlike *A. torridus*, Blackb., structurally, but differs by, *inter alia*, its very much greater size, and its head more or less granulate and not distinctly punctulate. From *A. goyderensis*, Blackb., it differs by, *inter alia*, the much more feeble crenulation of its elytral striae.

W. Australia.

A. WALKERI, sp. nov.

Minus angustus; modice parallelus; minus convexus; fere glaber; opacus; niger, palpis antennis pedibusque ferrugineis; capite confertim subtilissime punctulato et longitudinaliter strigoso, antice emarginato; prothorace subquadrato, quam longiori fere ut 3 ad 2 latiori, supra aequaliter confertim subtiliter punctulato, lateribus vix arcuatis, angulis omnibus obtusis, basi haud marginata; scutello triangulari minus elongato; elytris sulcatis, sulcis vix perspicue crenulatis; interstitiis cariniformibus, spina humerali parva; metasterni disco subfortiter minus sparsim punctulato; tarsorum posticorum articulo basali valde elongato.

Long. $1\frac{1}{3}$ l. Lat. $\frac{1}{2}$ l.

The extremely fine close and even puncturation of the pronotum of this very small species distinguishes it readily from all the other Australian *Ataenii* known to me.

N. Territory of S. Australia (Mr. J. J. Walker).

Euparia.

The following species must, I think, be referred to this genus. I regret that I have not in my extra-Australian collec-

tion a specimen of an already described Euparia for comparison. Lacordaire speaks of the genus as consisting of two divisions, the second of which appears to have been subsequently separated by Harold as the aggregate on which he founded *Ataenius*. Lacordaire distinguishes his second division of Euparia [of which, he says, the type is *E. (Aphodius) stercorator*, Fab.] from the first by the apex of the frontal dilatation on either side of the head being obtuse (acute in the first division), by the base of the prothorax being gently rounded (very sinuate near the hind angles, in the first division), and by the absence of a strongly developed humeral spine of the elytra. Harold (*Ann. Mus. Gen.*, 1877, p. 97) mentions some other characters, speaking of *Ataenius* as "perfectly distinct from Euparia by its prothorax not depressed on the sides, by its legs not elongated, and by its straight posterior tibiae." The insect before me presents all the characters indicated above as distinctive of Euparia, and therefore I have no doubt of its being a member of that genus.

E. OLLIFFI, sp. nov.

Elongata; sat parallela; modice convexa; fere glabra; sat nitida; piceo-nigra, antennis ferrugineis; capite crebre subtiliter subaspere punctulato, antice late leviter emarginato; sutura clypeali haud perspicua; prothorace quam longiori ut 10 ad 7 latiori, subquadrato, supra sat aequaliter crebre dupliciter (subtiliter et rugulose subgrosse) sat aequaliter punctulato, marginibus (antice quam postice magis late) manifeste explanatis, lateribus antice sinuatim sat rectis (ante angulos posticos emarginatis), angulis anticis obtusis posticis retrorsum prominentibus, basi ad latera fortiter sinuata; scutello anguste elongato; elytris sat fortiter sulcatis, sulcis sat obsolete crenulatis, interstitiis punctulatis sat angustis cariniformibus, spina humerali sat magna; metasterni disco crebre fortiter punctulato; tarsorum posticorum articulo basali modice elongato; tarsi sat robustis.

Long. $2\frac{1}{2}$ l. Lat. 1 l.

This species has a quite remarkable superficial resemblance to a liliputian *Cryptodus caviceps*, Westw. It was given to me many years ago by the late Mr. A. S. Olliff.

N. S. Wales (Tweed R.).

Psammodius.

This genus has not, to my knowledge, been previously recorded as Australian, although it is of wide distribution in other countries. Mulsant (Lamell. d. France) proposed to break it up into four genera, but Erichson subsequently declined to accept these aggregates as more than sub-genera, and in this he was followed by the Baron de Harold. None of the Australian species known to me can be regarded as typical examples of any of these sub-genera, though one of them comes very near to the sub-genus *Psammodius*, the only difference I can find consisting in the extreme feebleness (almost absence) of sulcation on the pronotum. The other species differ from the sub-genus *Psammodius* by their pronotum not laterally fringed with setae, from the sub-genus *Pleurophorus* by the basal joint of their hind tarsi shorter than the apical spine of the hind tibiae, and from *Platytomus* by their hind femora not more feeble than the front femora. The characters just mentioned would seem to associate them with *Diastictus*, but they have not the extremely small claws of that aggregate. Probably they are not far from *P. indicus*, Har. (from the Malay Archipelago), which is mentioned by its author as not referable to any named sub-genus, although the almost absence of sulci on the pronotum perhaps indicates a wide divergence; in respect of this character they would seem to be near *P. laevicollis*, Klug., which Harold places near *P. indicus*. One of these *Psammodii*, I have already described under the name *zietzi*, but by some oversight I attributed it to *Ataenius*, which I now see is certainly not its right place.

In assigning these insects to *Psammodius*, it seems desirable to say that I have not succeeded in making a satisfactory observation of the mouth organs, and that I am not sure of the outer lobe of the maxillae being denticulate at the apex. The species before me differ from *Aphodius*, *Ammoecius*, &c., in having the top of the front declivity of the elytra defined, and from *Euparia*, *Ataenius*, and *Rhyssemus* by their hind tibiae strongly dilated towards the apex. Their hind femora of widely oval form (with the front outline very strongly arched), and the strongly granulate head with its clypeus not distinguished from the general surface, are quite in accordance with *Psammodius*, as

also the narrow elongate scutellum. The apex of the pygidium, when the abdomen is not shrunk or unduly extended, is distinctly visible but only to a small extent. The length of the basal joint of the hind tarsi varies (as in the acknowledged sub-genera of *Psammodius*) but is never greater (as it is in *Ataenius*, etc.) than the width of the apex of the hind tibiae. The only character that causes me any hesitation in placing the following species in *Psammodius* is the extreme feebleness of the inequalities on the surface of their pronotum, but (as noted above) there is already at least one species of *Psammodius* (recognized by Harold) in which the sulci of the pronotum are more or less obsolete. The eyes are normal, and very distinctly granulate.

PS. AUSTRALICUS, sp. nov.

Ovatus; sat latus; convexus; sat nitidus; sat glaber (sed prothorace setulis fimbriato; rufo-brunneus; capite granulato, antice late submarginato; prothorace quam longiori ut 3 ad 2 latiori, supra grosse minus inaequaliter minus sparsim (sed prope latera sparsim) punctulato, latera versus transversim (pone marginem anticum leviter, prope medium obsolete) breviter sulcato, lateribus arcuatis, angulis omnibus obtusis, basi haud marginata; scutello triangulari modice elongato; elytris crenulato-striatis, interstitiis vix convexis vix perspicue punctulatis, spina humerali minuta; metasterni disco laevi; tarsorum posteriorum articulo basali quam tibiae latitudo breviori.

Long. $1\frac{3}{5}$ l. Lat. $\frac{1}{5}$ l (vix).

N. S. Wales (from Mr. Lea).

PS. OBSCURIOR, sp. nov.

Subovalis; minus latus, sat convexus; sat nitidus; fere glaber; nigro-piceus, palpis antennis capite antice pedibusque rufis; capite granulato, antice emarginato; prothorace quam longiori fere ut 4 ad 3 latiori, supra in parte postica longitudinaliter sulcato, acervatim grossissime punctulato, latera versus transversim (pone marginem anticum profunde, prope medium vix perspicue) sulcato, lateribus parum arcuatis, angulis omnibus obtusis, basi haud marginata; scutello triangulari sat anguste elongato; elytris striatis, striis profunde crenulatis, interstitiis sat angustis sat con-

vexis vix perspicue punctulatis, spina humerali modica; metasterni disco laevi; tarsorum posteriorum articulo basali quam tibiae latitudo breviori.

Long. $1\frac{2}{5}$ – $1\frac{3}{5}$ l. Lat. $\frac{2}{5}$ l.

Decidedly narrow and elongate for a *Psammodius*. The sulcation of the pronotum is not so obsolete as in the other two Australian species that I attribute to the genus. The puncturation of the pronotum is extremely coarse. In some examples the elytra are more or less decidedly brown.

S. Australia; also W. Australia (from Mr. Lea).

TABULATION OF AUSTRALIAN PSAMMODII.

A.—Pronotum fringed with setae - - - australicus, Blackb.

AA.—Pronotum not setulose.

B.—Length of basal joint of hind tarsi considerably less than width of apex of tibia - - - - - obscurior, Blackb.

BB.—Length of basal joint of hind tarsi scarcely less than width of apex of tibia - - - - - zietzi, Blackb.

Saprosites.

This genus has not been previously recorded as Australian, although at least one Australian species belonging to it has been described as a member of a closely allied genus. I have in my extra-Australian collection a specimen of *S. pygmaeus*, Har., named by Dr. Sharp, and therefore can be quite confident in referring the following four species to *Saprosites*, as they are all undoubtedly congeneric with *S. pygmaeus*. They differ essentially from all the other *Aphodiides* known to me by the structure of the mesosternum, which is not declivous between the intermediate coxae but continues the plane of the metasternum. This segment, however, varies remarkably in its structure, according to the species, in other respects; the median line in some species being a narrow longitudinal carina (as in *S. pygmaeus*); in other species the mesosternum being, between the intermediate coxae, a much wider and non-cariniform process which is either nearly flat or obtusely convex. The hind tibiae

are short and strongly dilated towards the apex, but not transversely carinate. The top of the front declivity of the elytra is not distinctly margined, but is defined and abrupt [as compared with the same in (*e.g.*) *Aphodius*].

My *Ataenius mendax* must be transferred to this genus. I have received from Mr. Lea some specimens under the name *Ammoecius nitidicollis*, Macl., which also appertain to *Saprosites*. Macleay's description mentions no character indicating the genus of his species and is so brief that it might apply to any one of several *Ataenii*, etc., before me. Presumably, however, Mr. Lea has compared them with Macleay's type and considered them identical, though it must be noted that I have seen a different species (a *Saprosites*, however) in Mr. Griffiths' collection, which their owner tells me Mr. Lea regarded also as *S. nitidicollis*, Macl. As, however, the specimens Mr. Lea sent to me agree better with Macleay's description than does that shown me by Mr. Griffith (the head in the latter being quite strongly punctulate), I think it is best to claim Macleay's name for the former and to treat it as correctly named by Mr. Lea.

The Australian species which I refer to *Saprosites* do not seem to have strong external sexual characters. In the three species of which I have both sexes [*mansuetus*, Blackb.; *nitidicollis*, Macl. (?); and *mendax*, Blackb.] I can find no sexual characters on the head or in the armature of the front tibiae, but the sexes differ in the structure of the abdomen; the pygidium in one sex (probably male) being vertical and more convex, while in the other sex it is flatter, and sufficiently deflected under the insect to be visible when the specimen is laid on its back. In the former sex the ventral sutures are strongly sinuous with their front margin multidenticulate; in the latter a little (*nitidicollis* and *mendax*) or much (*mansuetus*) less so.

S. MANSUETUS, sp. nov.

Minus elongatus; sat parallelus; minus convexus; fere glaber; sat nitidus; piceus, nonnihil rufescens, palpis antennis pedibusque plus minusve dilutioribus; capite subtilissime vix crebre punctulato, antice late leviter emarginato; sutura clypeali haud perspicua; prothorace subquadrato quam longiori fere ut 4 ad 3 latiori, supra dupliciter (subtiliter et fortiter) subacervatim

punctulato, lateribus leviter arcuatis, angulis omnibus obtusis, basi ad latera manifeste (in medio haud) marginata; scutello triangulari minus elongato; elytris fortiter crenulato-striatis, interstitiis minus convexis subtilissime punctulatis, dente humerali parvo; metasterni disco subtiliter nec crebre punctulato; mesosterno inter coxas intermedias longitudinaliter anguste carinato; tarsorum posticorum articulo basali quam tibiae latitudo subbrevis.

Long. $1\frac{3}{8}$ l. Lat. $\frac{3}{5}$ l. (vix).

Not unlike *S. pygmaeus*, Har., and with the mesosternum of similar structure. It is, however, *inter alia* a larger species of darker colour, and having the pronotum very much more coarsely punctured.

W. Australia; Donnybrook (Mr. Lea).

S. STERNALIS, sp. nov.

Minus elongatus; sat parallelus; minus convexus; fere glaber; sat nitidus; rufus; capite subtilissime vix crebre punctulato, antice late leviter emarginato; sutura clypeali nulla; prothorace subquadrato, quam longiori fere ut 4 ad 3 latiori, supra dupliciter (subtiliter et fortiter) subacervatim punctulato, lateribus leviter arcuatis in parte antica sat late deplanatis, angulis omnibus obtusis, basi haud marginata; scutello triangulari modice elongato; elytris fortiter crenulato-striatis, interstitiis minus convexis laevibus, dente humerali sat magno; metasterni disco laevi; mesosterno inter coxas intermedias laevi longitudinaliter late obtuse convexo; tarsorum posticorum articulo basali quam tibiae latitudo sublongiori.

Long. $1\frac{1}{2}$ l. Lat. $\frac{3}{5}$ l. (vix).

Differs from the preceding (*S. mansuetus*), *inter alia*, by its mesosternum not carinate between the intermediate coxae and by the lateral margins of its pronotum being very conspicuously flattened in their front part.

N. S. Wales; Tweed R. (Mr. Olliff).

S. MENDAX, Blackb.

Modice elongatus; sat parallelus; minus convexus; fere glaber; sat nitidus; piceus, pedibus dilutioribus, palpis antennis-

que rufis; capite crebre minus subtiliter punctulato, antice late leviter emarginato; sutura clypeali nulla; prothorace subquadrate, quam longiori fere ut 4 ad 3 latiori, supra dupliciter (subtiliter et sat fortiter) vix acervatim punctulato, lateribus leviter arcuatis in parte antica summa leviter dilatatis, angulis anticis obtusis posticis obtuse dentiformibus, basi infra superficiei planum marginata; scutello triangulari modice elongato; elytris fortiter crenulato-striatis, interstitiis minus convexis sublaevibus dente humerali sat magno; metasterni disco subcrebre minus subtiliter punctulato; mesosterno inter coxas intermedias punctulato longitudinaliter late subplanato; tarsorum posticorum articulo basali quam tibiae latitudo sublongiori.

Long. $1\frac{2}{3}$ l. Lat. $\frac{3}{5}$ l.

As this insect was originally described as an *Ataenius*, and characters were omitted that distinguish it from the other Australian series of *Saprosites* (then unknown to me), I have thought it well to re-describe it. I may add that, since I wrote the original description, I have taken in Tasmania examples of a *Saprosites* in which the puncturation of the head is very evidently finer, but, as I cannot find any other definite characters to distinguish them from *S. mendax*, it seems best to regard them as representing a local form of that species. I have also seen what I believe to be the same species, in Mr. Griffith's collection, of a uniform ferruginous colour.

Victoria; N. S. Wales; Tasmania.

S. NITIDICOLLIS, Macl. (?).

The species mentioned above as probably this insect is readily distinguished from *S. mansuetus*, Blackb., by its mesosternum wider and non-carinate between the intermediate coxae, from *S. sternalis*, Blackb., by the very distinct fine puncturation of its meta- and meso-sterna, and from *S. mendax*, Blackb., by the hind angles of its prothorax not outwardly prominent.

The following table shows the characters by which the four Australian species that I refer to this genus may be distinguished. *inter se*.

A.—Mesosternum between coxae narrow and

cariniform - - - - - *mansuetus*, Blackb.

AA.—Mesosternum between coxae wide, and
flattish or obtusely convex.

B.—*Sterna non-punctulate* - - - *sternalis*, Blackb.

BB.—*Sterna conspicuously punctulate.*

C.—Hind angles of prothorax outwardly
prominent - - - *mendax*, Blackb.

CC.—Hind angles of prothorax not out-
wardly prominent - - - *nitidicollis*, MacL.?

Saprus (gen. nov., APHODIIDARUM).

Palpi labiales breves, maxillares modici (horum articulo ultimo quam ceteri longiori); mandibuli labrum excedentes; labrum apertum transversum; caput sat breve, sat convexum, antice vix emarginatum; oculi modici, perspicue sat subtiliter granulati; antennae 9-articulatae; prothorax transversus fere aequalis convexus; scutellum modicum, minus angustatum; elytra elongata, parallela, superficie dorsali antice bene definita nec margine elevata instructa, humeris dentatis; pedes sat elongati; pedum posticorum femora oblongo-ovalia, tibiis a basi ad apicem sat aequaliter sat fortiter dilatatis in margine externo denticulatis, tarsis sat elongatis (articulo basali sat cylindrico, quam sequentes 3 conjuncti et quam tibiae spina apicalis vix breviori); pygidium elytris haud plane tectum; coxae anticae contiguae, intermediis late distantes; mesosternum fere horizontale, inter coxas intermedias longitudinaliter tricarinatum.

It is impossible for me to describe the following very interesting species without giving it a new generic name, although I am very chary of proposing new genera in groups whose existing genera are known to be usually of wide distribution; since only a specialist in such a group can feel any confidence that he may not be re-naming some genus founded on a recently discovered species in some distant land. I am unwilling, however, to postpone the record of this species, and feel fairly sure that it cannot be placed in any genus known to Australasia or the Malayan regions. Its protruded labrum and mandibles associate it with *Aegialia*, with which genus, however, it agrees in scarcely any other structural character that is distinctive among the Aphodiides. Lacordaire, in his notes on *Aegialia*, states that there are some

species of more or less elongate form which Erichson transferred from *Psammodyus* to *Aegialia* on account of their having the labrum and mandibles of the latter. Lacordaire does not particularize the species, nor does he mention where Erichson's note is to be found, nor can I find it in any work of Erichson's that I possess. Probably *P. cylindricus*, Eschsch, from the Aleutian Islands, is one of those referred to. I hardly think it possible, however, that the species described below can be congeneric with them, as it is unimaginable that Erichson would have referred it to *Aegialia* in spite of its elongate form, and if he had done so he would certainly have been in error. It has the facies of *Saprosites*, which it resembles in most of its characters.

S. GRIFFITHI, sp. nov.

Elongatus; parallelus; minus convexus; fere glaber; sat nitidus; piceus, palpis antennis pedibusque dilutioribus; capite crebre minus subtiliter punctulato; sutura clypeali perspicua; prothorace quam longiori ut 5 ad 4 latiori ab apice retrorsum leviter angustato, supra vix crebre (basin versus fortiter, antrorsum gradatim magis subtiliter) punctulato, postice longitudinaliter leviter late impresso, lateribus leviter arcuatis prope basin sat abrupte sinuatis, angulis auticis subprominulis posticis rectis, basi haud marginata; elytris sat fortiter crenulato-striatis, interstitiis convexis vix perspicue punctulatis, dente humerali modico; metasterni disco grosse inaequaliter punctulato.

Long. 2 l. Lat. $\frac{7}{10}$ l.

The deep median sulcus of the metasternum, which is present in all the species known to me of *Saprosites* (but which does not seem to vary sexually nor in a manner available for specific characters), becomes in this insect an oval excavation very coarsely punctulate at the bottom. I do not find in the specimens before me any characters likely to be sexual. The front tibiae are tridentate externally (as in *Saprosites*) and the ventral sutures are normal, without denticulation. The pygidium does not differ materially from that of the sex of *Saprosites*, which I regard as the female. Probably I have not seen the male of this insect.

Tasmania (Mr. Griffith).

HYBOSORIDES.

This group (Lacordaire's 4th tribe) of the sub-family Coprides agrees with the Aphodiides in having two spines at the apex of the hind tibiae, but differs from the Aphodiides, *inter alia*, in having 10-jointed antennae, with the basal joint of the club cupuliform (the Aphodiides having 9-jointed antennae with the basal joint non-cupuliform). So far as I know it is represented in Australia by a single genus only.

Phoeochrous.

Of this genus a single species *P.* (*Silphodes*) *emarginatus*, Cast., has been reported by Harold to have been found in North Queensland, and Macleay described, under the name *Silphodes hirtipes*, an insect (also from Queensland) which appears to be a *Phoeochrous*. I have before me a considerable number of specimens from various localities in Queensland which seem to be certainly the insect described by Macleay, and the question suggests itself whether they are distinct from *P. emarginatus*. I am inclined to regard them as distinct, although I have not access to Castellan's description. Harold, however, states that *P.* (*Silphodes*) *indicus*, Westw., and *sumatrensis*, Westw., are both identical with *emarginatus*, and Westwood's descriptions under those names do not appear to fit satisfactorily the Queensland specimens that I have mentioned. Nevertheless, the descriptions are very brief, and I cannot say that they specify any one character (appearing in both descriptions) that is absolutely irreconcilable with the identity of *P. hirtipes*. The most obvious inconsistency between it and Westwood's descriptions is that the latter call the head in *sumatrensis*, and the pronotum in *indicus*, "tenuissime punctato," which is not the case with either of those segments in *hirtipes* (its head, especially, being in both sexes quite strongly punctulate). Westwood's phrase, however, may have been a little exaggerated in respect of the insects before him; and so also, perhaps, with regard to the other small discrepancies that I notice. In *P. hirtipes* all the claws of the male are much more robust than those of the female, and are appendiculate.

In Masters' Catalogue a second genus (*Coelodes*) of the Hybosorides is enumerated as Australian, but Harold has pointed out that the species attributed to it (*bimaculatus*, Macl.) is in reality a *Liparochus*, and therefore not a Hybosorid.

[NOTE.—The author wishes it to be stated that names which are genitives of proper nouns were written with initial capitals by him, but were altered on the responsibility of the Editor. The author also objects to the non-use of diphthongs, and the use of Roman type for scientific names mentioned in the body of the paper.—THE EDITOR.]
